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ABSTRACT

This discussion reviews the effects of technology and economics on the publishing and influence of scholarly journals and their role as a communications medium. Areas covered include the functions of the primary journal, economic pressures, and the availability of new technologies such as computers, synoptic journals, microforms, word processing equipment, electronic journals, and the digitized transmission of information. Implications of these innovations for the future of the scholarly journal are considered. (FM)

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New patterns in serials publishing

by

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NEW PATTERNS IN SERIALS PUBLISHING

The scholarly journal has had a relatively unchanged existence, both physically and in type of content for the past 300 years. If there are plans to change even a small part of this well established information system, the reasons must be socially, and/or economically, quite powerful. Even to consider change is an enormously radical step to take, causing much soul searching and retrenchment of attitudes on the part of the protagonists. Sir Arnold Bax in his book Farewell to my youth said, "One should try everything once, except incest and folk dancing", to which I would add, "and changing the scholarly journal", so strong, at times, is the lobby for the retention of this traditional medium of communication.

The functions of the primary journal were admirably described by Herschman in the Journal of Chemical Documentation in 1970.[1] In summary, he described them as archival, current awareness, and social. It is essential that these functions are borne in mind when change is considered. Any new or relatively new system should provide the means of storing information for posterity, should allow current dissemination of knowledge and should give the author the prestige and recognition he deserves for his intellectual efforts. The majority of scholarly journals attempt to fulfil these requirements, some with greater success than others. Any new dissemination system which neglects to provide any one of them, particularly the third - the social function, will find acceptance by the information community difficult to attain; and without authors there is no information community.

The past five years has seen the scholarly journal examined and reappraised as a communications medium by a number of individuals, particularly in Britain and America. These studies were mainly funded by the British Library and the US National Science Foundation. There are three separate, but related pressures for this re-assessment, and for the consideration of innovations and developments which would improve, complement, or even at times replace some conventional journals.

The first reason, and one most familiar to librarians, is economic. The golden goose of the 1960's laid the inflationary egg of the 1970's which was a painful experience for all concerned. Production costs of journals rocketed, followed by the inevitable rise in subscriptions, averaging well over 20% per annum. Many publishers, both institutional and commercial, searched for ways to reduce their costs. Some were less effective than others. One enthusiastic editor of a society journal decided to accept advertisements for his journal as a means of raising income. His more business minded successor later discovered that

it had been costing the society considerable more to include the advertisements in the journal, than had been received in income from the advertisers. Other editors attempted to affect savings by using camera ready copy and other expedients in an attempt to keep annual rises to an acceptable level, but so often the economic pressures were on a global scale and beyond their control..As prices rose, the number of subscriptions tended to drop, particularly those of individuals as opposed to institutions such as libraries. Even here, re-assessment of serials holdings was taking place and a number of titles were cancelled as perceived use became the main criterion for selection and retention. This, I feel, was an exercise long overdue in a number of academic libraries.

The second cause of the current re-assessment of the scholarly journal is the availability of new technology. The computer has been used for a number of years for various aspects of journal production, particularly in the United States, with such techniques as computer photocomposition. But during the past few years its application has been directed toward the total electronic transmission of information, providing us with completely new concepts to consider, such as th e electronic journal and the editorial processing centre. With the costs of handling information in this form dropping, in some cases, quite dramatically, a number of organisations are seriously studying them as alternatives to the conventional journals or as improvements to the current editing and production processes.

Together with economic and technological causes for considering change, came a desire to improve the existing system of information transfer, or at least parts of the system. Dissatisfaction has been felt for many years over such problems as the over-production of journal papers, delays in publishing them, the quality of authorship, refereering, copyright, and the low amount of use made of the published research paper. The latter point is possibly one of the least regarded but I feel one of th- most significant factors when criticism is made of the present method of disseminating current information using the medium of the scholarly journal. Rossmassler in an article in Journal of Chemical Documentation in 1970,[2] said that "the system does a good job of assembling knowledge into packages which are about 90% mismatched to the needs of the users". In the same year it was estimated that no paper in the core journals of psychology would be read by more than 7% of the subscribers of the host journal. Other subject areas such as chemistry, physics and geology have provided an equally condemning set of statistics regarding "the low relevancy of journal content". It is always dangerous, even if at times very convenient, to take statistics out of context, but we must ask the question, "Is the scholarly journal a luxury which we cannot afford?" This point is particularly relevant

so for some time prior to its publication.

The synoptic journal is a relatively recent innovation which is aimed at providing an improved and effective dissemination service. Now that its initial period of examination is well under way what can be said about this type of publication? Firstly, it fulfils the three requirements of the scholarly journal; providing a current awareness tool, an archival record and conveying the prestige and recognition which the author desires since the papers continue to be refereed by experts nominated by the publishing society. Authors have proved for many years that they could write summary versions of full length papers in a numberof short communications or letters journals. Indeed author reaction to synoptic writing has generally been favourable for the synoptic journals published currently in the UK, covering chemistry, production engineering, management research and mechanical engineering. The benefits to the information community apply at all levels. The publisher has speedier production, his costs are reduced and an improved system of communication is achieved. The user benefits by gaining access to a publication of a manageable length, easily browseable and at a price which is not as prohibitive as so many of the full length Scholarly journals. The packaging of information in synoptic form could have an advantage to the librarian of reducing the demand on his interlending services which increasingly will become overloaded as the use grows of on-line bibliographical retrieval systems. The present abstracting and indexing services, although invaluable, do have a number of weakness. A major one is the inevitable problem of not prodiving enough information in the abstract to enable the user to request a document with more than a 50% chance of the document meeting his needs. Synoptic papers by virtue of their length and nature, being completed in themselves, could help aleviate this deficiency. Present use studies show that there is little demand for the back-up full length articles. In view of this, the obvious question should be asked why does the present information transfer system still so strongly support an underused, overpriced, outmoded method of communication as the scholarly journal with its full length papers?.

A second major feature of current serials publishing is the growing availability of microforms as alternatives to hard copy. We are familiar with the use of microfilm for archival records of newspapers and back runs of serials, but during the past few years an increasing number of publishers are providing microform issues of journals simultaneously with current hard copy. The main attraction of this service to librarians appears to be the amount of storage space which would be saved by keeping journals in this format. The subscription prices are either the same as the hard copy version, or only reduced

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competition with each other. In order, to help overcome this problem, a variety of trade-in schemes are available. It is possible to exchange microforms for a set of hard-copy issues of a journal or to trade in a printed version and have the microform version reduced by an appropriate amount. The potential value of this type of service to librarians is fairly high when the total costs are considered. Unfortunately, until user resistance is overcome, or at least alieviated by the provision of better reading environments, better equipment and facilities, there is little incentive for any reader to encourage the provision of microforms as an alternative to hard copy.

Colour microform both film and fiche is now well established as a publishing medium. Its greatest advantage is that it is possible to be reproduced at a fraction of the cost of colour printing. Colour microforms share the on-demand quality of all microform; a great advantage to the publisher, particularly in relation to material which is likely to have a sporadic and low demand. The quality of colour microforms varies from publisher to publisher but there exist good examples of the medium, although there is still room for technical improvement. Amongst the well known journals available in colour microfilm are National Geographic and Studio International, and Wildlife Disease was produced on colour fiche in 1972. We are familiar with the combination of microforms with books to produce a hybrid microfiche-book for very specialised subject matter, and this technique has also been employed for Perspectives in Opthalmology, which is a quarterly serial with illustrations on microfiche and the text on hard copy.

The future of microforms as an alternative to conventional serials will probably be in the hands of librarians. If economic pressures cause them to choose this medium in preference to hard copy for back runs, or as second or subsequent copies of journals, publishers may be encouraged to improve the quality of microforms, make available a wider range of titles and provide a more attractive pricing structure than currently exists. This in turn may make the librarians think about the reading environment and equipment provided for the readers and cause improvements to be made, thus helping microforms to be more acceptable to users.

When looking at new patterns in serials publishing, the technological advances experienced in the 1970's have offered some of the most stimulating and revolutionary ideas to consider. Some of the advances are already well established, others are in their infancy, although proving so precocious that we may find that todays new technology has been rendered obsolete almost overnight. One major develop-

which is basically an electric typewriter with a text processing device attached. It is possible with normal typing skills to edit, correct and up-date without need to key in more than the actual alterations. The author need not have any inhibitions about last minute changes (which can be expensive using a conventional printing system) and thus can have the script perfectly typed and error-free at the latest possible time before publication. The potential benefits are the cost saving of a single keyboarding (as opposed to possibly six or seven keyboardings), the advantages of almost immediate turn around in typesetting and the production of error free texts without the need for proof-reading. The capital cost of the equipment could be offset against savings in typing the original. It is important to remember that in periodical work with large areas of text the typesetting will represent about 50% of the total cost of production. Input for photo-composition can also be made from optical character recognition (OCR), where typed texts are scanned by a photo electric cell and translated into codes (usually on punched paper tape) compatible with the phototypesetter, In the systems which offer compatibility between word processing and phototypesetting, a disc or cassette can be sent from the publisher to the printer for conversion prior to the printing process. Phototypesetting via work processing input is well established in the United States and Germany, but the criteria for acceptance by the British print unions appears to be whether it is taking work away from their members. There are instances of word processing and OCR output to photo-typesetting being acceptable if it results in work being produced that would not otherwise be printed.

Most of the word processing equipment available in the United Kingdom is currently advertised for basic office use, but a growing number of organisations are also using it as an in-house composing unit for multiple copies of documents of various types, such as reports. Word processing may be capital intensive in its creation, but with a high volume of input, plus its use as an efficient office typing system, it could be regarded as an economic proposition. It may be seen that a society publishing a low circulation specialist journal, which at present has a precarious future, could use word-processing equipment to compose the journal in-house, either independently or co-operatively with other societies with a possible saving of production costs, a possible increase in subscriptions, and a longer life for the journal. Once co-operation between societies or institutional publishers is achieved and the necessary equipment installed, we can think in terms of the establishment of the editorial processing centre. This concept has been described and discussed in considerable detail by the National Science Foundation in the United States and Aslib in the United Kingdom. The EPC is a co-operative venture between society publishers where

a computer is used to undertake [illegible]

Perhaps it requires another severe financial crisis to develop for it to be re-evaluated and regarded as a serious solution to some of the publishers problems rather than a creator of even greater ones, which is the way it appears to be looked at now.

A recent innovation is the electronic journal. This concept again emanated from the NSF in the early 1970's. At present the British Library Research and Development Department is negotiating with various institutions in order to experiment with an electronic journal in Britain. Unlike many technological developments which either floundered, or were delayed in their adoption by pressures other than the mechanics of the system, the electronic journal has already been tested successfully in a number of institutions in America and Western Europe.

A very simple example of an on-line journal has been developed at Manchester Polytechnic. On-line Education News (OLEN) is available on-line to possessors of teletype compatible terminals as a newsletter for lecturers at library schools concerned with teaching computer systems. It is available daily and users can request the full contents of the main file, up to date details of news from individual library schools, or general news from sub-files. A hard copy version is reproduced at the end of each term directly from the stored text. At the moment input is made at Manchester but it is hoped that in the future users will be able to input news directly. It must be stressed that this a very simple system which grew from a distaste for the inconvenience of producing a hard copy newsletter with the requirements of proof reading, re-typing, duplicating, distribution and accounting. We also wished to see how the theory would work in practice. However, a more important question is, if this type of communication system was generally accepted and became widely established, where does it leave the librarian? Will there be a proliferation of private journals or information exchange groups ignoring the traditional routes for organising and disseminating information? A paper to a recent American conference looked towards 2001. It emphasised the greater influence of technology on both formal and informal communications, and saw librarians taking a more active role between the producers and the users of information. The latter groups probably will be using, in the future, more electronic methods of communicating such as teleconferencing, and the librarian could be expected to provide terminals for authors to input their texts, retrieval services for other authors work - as well as the present dissemination and supply services. The whole developing into a system with much greater economic and technological interdependance between all members of the information community. If this forecast if fulfilled it may mean that a fairly revolutionary charge will need to take place in the training and education of information handlers. If we are to live harmoniously with the computer in the future we should take the opportunity to investigate the potential of new technology

in the library. I would like to suggest that we as librarians should, for example take the lead in developing software for library functions. This is a skill for which few of us as yet are trained, but unless the librarian establishes his position as the centre of his organisations information transfer network, there is a chance that the research library will progressively become bypassed, as research workers are given desk top models of microcomputers and use these machines to develop their own personal information storage and retrieval systems. A delegate at the 1978 Aslib Conference, already on record for expressing the view that by the year 2000 there will be no more jobs for information officers in special libraries, has changed his mind. He now claims after hearing about recent developments in communications technology he thinks that there will be no more jobs by the year 1990. This tongue in cheek estimate although not to be taken too seriously does give food for thought.

When considering the implications of new technology and its potential use in serials publishing, it would appear that we are facing a revolution as fundemental as that which resulted from the introduction of printing by moveable metal type in Europe over 500 years ago. However, there are other inovations concerned with the transmission of information which suggest that we are facing not only one revolution, but a whole series of them. Recent advances in the technology of light have presented us with a number of discoveries which could affect our future. Holography with its immense storage capability, fibre optics and laser printing all provide new methods of storing and transmitting information. The latter technique, for example, can print over 400 pages per minute. When a user can push a button to retrieve a complete research paper plus accompanying data, and a copy of War and Peace in under two minutes, who needs libraries? Even the old argument about the convenience of handling single items of print on paper, either as research journals or books, begin to look a little thin when confronted with the prospect of a battery powered reading tablet with a bubble memory.

Another area which is currently exciting much attention in the communications world is the digitised transmission of information. It is early to speculate how this may affect serials publishing and libraries, but an experiment in Britain between the British Library lending Division and two libraries in London, suggests that on demand pUblishing could possible rival the transmission of photocopies through the post as the main method of information transfer for urgently needed items between large research libraries. If this technique develops economically and efficiently, and there is every indication that this will be the case, we could see the fruition of Bernal's idea of a central depositary of scientific papers, not as separates sent through the post, but transmitted electronically.

and books. Undoubtably, technology will influence our professional lives progressively, but I see it as a parallel development with the traditional methods of communication. These are too convenient to use and too economic to produce and purchase to be quickly replaced. The traditional serials will continue, and will be improved as new production techniques and management skills are employed in their creation, but it is equally true that alternative forms will grow because of the pressures discussed earlier. For example, one large commercial publishing group, Butterworths, has been investigating for many years all new methods of publishing and disseminating information. The immediate results of these studies were improvements and changes made to the various areas of printing and distribution of publications. However, the amount of material which has been discovered, is so enormous to handle and examine, that a special research and development department has been set up. This R and D group has been testing new equipment and systems and as a result a new company has been formed known as Butterworths (Telepublishing) Ltd. This company now offers to the UK legal and accountancy professions a fast computerised information system as well as other services such as microfiche journals and information on audio cassettes. In announcing the new company, the Chairman and Chief Executive of the Butterworth Group, Gordon Graham said: "We believe that Butterworths, as the UK's leading legal publisher, and as a publisher also in the fields of science, technology and medicine, has both a major opportunity and a major responsibility to launch into that form of publishing in which the computer replaces the printing press. As the name Telepublishing indicates, we believe that this is a proper role for traditional publishers and should not be left to governments, electronic corporations or user groups". However, Mr Graham also points out, no doubt to the relief of many of his customers, "that folio publishing will be the dominant medium for transmitting professional information, but that computer-assisted publishing will be a valuable new dimension."

A longer term view might see society evolving away from the tradition publication and communications systems towards a totally paperless system. The first areas to be replaced completely would be the information intensive services such as abstracting and indexing publications. Some of the larger of these services are already experiencing a decline in total numbers of subscriptions due to the growth of on-line data bases. Other information sources which may be only available in electronic form in the future could include highly specialised primary publications, reference books and other data stores. These changes would present us with a totally new concept of information transfer and it is important that we consider them with an open mind as well as analytical judgement. Changes and innovations will need to be carefully monitored and their potential

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all, have the same aim, that is effective transfer of information, regardless of the package in which it comes.

P W Lea
August 1979

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